SPM MALAY LANGUAGE PAPER II LEARNING PACKAGE

By

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ABSTRACT

SPM Malay Language learning package developed for SPM (Sijil Pelajaran Malaysia) students. It can be used as a self-study material or teaching tool in schools.

SPM Malay Language learning package focuses on the proper preparation methods by providing guidelines and answering techniques to the students. It is a comprehensive tool that used to learn Malay Language effectively. The notes provided are from various researches whereas the exercises aim to help students to master the language well. The students are able to view their own performance and prepare themselves in specific topic they are weak in.

This software is developed using Macromedia Director 7, which includes text, graphic, sound and animation.

As a conclusion, SPM Malay Language learning package is a comprehensive learning package that helps students to achieve improvements in Malay language.

ACKNOWLEDGEMENT

I would like to take this opportunity to thank my supervisor Miss Ow Siew Hock and my moderator Puan Fariza Hanum for correcting my mistakes and for giving me guidance through out the project. Supervised under Miss Ow Siew Hock, I have indeed increased my knowledge in the area of multimedia programming, which is very popular nowadays. Being exposed to create a learning package, I get the privilege to encounter students and learn how to solve their problems. Being able to create a learning package is difficult especially for me since I had no knowledge on Macromedia Director 7, but this doesn't stop me from working towards it because of all the guidance from my supervisor. I am sure the knowledge I gained here will be very helpful to build my career in the near future.

It gives me great pleasure to acknowledge the following people who have assisted me in one way or another throughout my thesis period.

- My parents for giving me moral support all the time.
- My friends.
- All those not mentioned

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ABBREVIATIONS

AIFF	(Audio Interchange File Format)
CAL	Computer-Aided Learning
GIF	Graphic Interchanged Format
HTML	HyperText Markup Language
IQ	Intelligence Quotient
JPEG	Joint Photographic Experts Group
LPM	Lembaga Peperiksaan Malaysia
MCE	Malaysian Certificate of Education
MPEG	(Audio Interchange File Format)
QTVR	QuickTime Virtual Reality
RGB	Red, Green, Blue
SPM	Sijil Pelajaran Malaysia
PNG	Portable Network Graphics
UI	User interface
WAV	filename extension
CD-ROM	Compact Disc Read-Only Memory

Chapter 1

Introduction

1.1 Introduction

Sijil Pelajaran Malaysia (SPM) or formally known as Malaysian Certificate of Education (MCE) is an exam set by the Lembaga Pelajaran Malaysia (LPM) for students in the fifth form. This exam aims to determine the capabilities of a pupil. Students who manage to pass and fulfill the minimum requirement will get a better chance to continue their studies either in the sixth form or enter the matriculation course in the university. Any courses conducted in Malaysia either from the government or private colleges, require students to have at least a pass in the SPM. Hence, SPM is the stepping stone for one's future undertakings.

SPM consists of minimum nine papers. The compulsory subjects be include Bahasa Melayu (Malay Language Paper), Mathematics, English, Morale Education (Pendidikan Moral) and History. Elective subjects are Physics, Biology, Chemistry, Additional Mathematics for science stream and Geography, Accounting, Literature, Commerce and Science for arts stream, meanwhile arts, Islamic studies, Indian studies and Chinese studies are also offered.

As the SPM exam is set by the LPM , it is impossible for a teacher to spot the exam questions. A student's results depend on his/her hard work and diligence. The teachers can only give guidance, recommend references, explain the answering techniques and motivate the students to excel in the SPM exam.

Recently, research studies have been carried out to help students to solve the various problems encountered in their studies. The project that I am undertaking is to achieve such purpose. It covers the course contents of the SPM Malay Language paper II. It is done with thorough research to give everyone especially students the accurate and a good reference. The element of information technology is blended to give the most technological guidance as to produce excellent result.

1.2 Purpose

The purpose of this project is to:

1) prepare the students for the SPM Malay Language paper II.
2) this is achieved through providing a set or exercise for revision.
3) quick reference.

1.3 Scope

The scope of this project covers the following areas :

1) Comprehension (*Prosa Moden*)

A good understanding of the passage and its flow are needed. The passage also contains difficult phrases to test the students language skills.

2) Malay Classical Passage (*Prosa Klasik*)

The passage describes the ancient Malay history and is written in classical language. It is selected from a range of books such as 'Hikayat Gul Bakavali', 'Hikayat Merong Mahawangsa', 'Hikayat Awang Sulung Merah Muda', 'Hikayat Sejarah Melayu' and a few other popular ancient stories.

3) Poetry (*Sajak*)

In poetry, flourish and hidden meanings are included to test the students' ability in understanding modern Malay poems. The poems are extracted from popular poets and popular lyrics.

4) Summary (*Rumusan*)

The students are also required to summarise a long passage, news, presentation, articles and fictions to about 250 words. The passage may contain a graph or chart in which the students need to interpret and extract the important information and figures from the given chart.

5) Grammar Understanding and Language Skills (*Tatabahasa*)

The grammar section is divided into two sections. They are :

i) making sentences, and

ii) language skills.

In making sentences section, the students are required to make sentences from the given words. The students must be able to differentiate the meaning of the words. The language skills section consists of joining a few sentences into a long sentence. It also includes converting a dialogue into normal sentences.

1.4 Overview

Chapter 1 : Briefly introduce SPM Malay Language. The scope and objectives of my thesis.

Chapter 2 : Overlooks the importance of Malay Language paper and it's contents. The benefits of CAL and the authoring tool used to develop the software.

Chapter 3 : It is planning stage, where by I explain on achievement, resources, project schedule, work breakdown, process model, transition diagram and flow chart.

Chapter 4 : It covers on requirement process, elicitation, specification and types of requirements.

Chapter 5 : System designing covers on the methodology used in designing the program.

Chapter 6 : System development and testing covering the development of the program such as coding, testing and documentation.

Chapter 7 : System evaluation emphasizing on strength and limitation. Future enhancement and problems faced is also included.

Chapter 2

Literature Review

2.0 Literature review

2.1 Importance of scoring in the SPM Malay Language paper

The Malay Language paper II is one of the core paper in the SPM examination. Hence, all students are required to get at least a credit in this paper. Failing to do so, a student will fall into the second grade even though he/she scored all As in other subjects. Thus, the SPM Malay Language paper is the most important paper It is also one of the requirements that must be fulfilled in order for a student to enter into a local university.

2.2 Contents

SECTION	MARKS(%)	CONTENTS	REMARKS
1	30	Summary	Compulsory
2	30	Comprehension (modern Malay passage)	Compulsory
3 a)	20	Malay Classical Passage	Answer either one
b)	20	Poetry	
4 a)	10	Making sentences	Compulsory
b)	10	Language skills	Compulsory

Table 2.1 The contents of Malay Language paper II

2.3 The benefits of Computer-Aided Learning (CAL)

1) Simplicity

Whether the students are at home on Saturday night or in China on a vacation, as long as they bring along the CD-ROM, they can study or just read through the notes. This unlimited access means that with some careful planning everyone can fit in study time when it suits them best.

2) Flexibility

Is the fact that the students are in control of their own program. They have their materials and their objectives, so they can set their own learning pace. If they any difficulties with one aspect of their studies, all they have to do is just go through the explanation section again and again. They don't need their tutor to be there as everything is on the CD-ROM and they can be secure in the knowledge that they are holding no one back.

3) Productivity

As a Malaysian, our country is going into a new era and changing its image to computing and information technology. Even the government is changed into the 'electronic government'. As to keep to that phase set and not to be left out in every single aspect, CAL seems to be too little compared to the fact above. But it trains the student to be familiarized with the technology. Adding to that,

CAL has less assistance so a student could as well be independent. These will make a student more productive, technically and mentally. Furthermore, productivity and quality is what a nation desperately wants in order to squeeze into first world countries.

2.4 Multimedia Tools

Multimedia Tools is a powerful component library created especially for developing multimedia applications. It is extremely easy to use and yet very powerful. This library has incomparable visual design capabilities, flexible architecture of components, optimized code, and professional looking visual control design. Multimedia Tools is the most complete library in existence on the market.

2.5 Macromedia Director 7

Macromedia Director 7 Shockwave Internet Studio is the most Web-savvy Director yet. Not that Macromedia is ignoring creators of games, CD-ROM titles, or interactive kiosks; many of Director's new features are just as welcome in these non-networked applications.

2.6 Macromedia's features as an authoring tool

2.6.1 Dynamic alpha channels

Director 7 imports high-quality graphics with alpha channels. Once imported, the graphic or alpha channel can be controlled to create real-time animation and effects that provide truly compelling content.

- Import bitmaps with alpha information from Fireworks, PhotoShop, or Debabelizer, and more.
- Control the degree of transparency for every pixel in a bitmap.
- Reduce the bit depth of an image while maintaining alpha channel information.
- Create effects like transparency, masks, trails, blends, and gradient overlays.
- Use built-in ink effects: copy, not copy, blend, blend with a transparent value set, and background transparent.

2.6.2 Real sprite effects

Full 360-degree rotation, horizontal/vertical flipping, and scalable skewing add real-time animation to your movies. No duplication in effort is necessary to create incredible effects with bitmaps, Flash 3, QuickTime 3, or text.

- Rotate, scale, skew, and flip sprites during playback in real time.
- Easily create effects that were impossible or very difficult before.
- Create incredible effects with single elements and smaller file sizes.
- Control effects with both Lingo and the Score.
- Apply changes directly to the Stage.

2.6.3 New vector shapes

Create extremely small, high-quality shapes with built-in vector drawing tools. The new pen, rectangle, line, and circle tools create polygons and curved shapes that can be animated and altered while authoring or at run time.

- Create interesting morphing effects.
- Edit on Stage, in the Media Editor window, "FreeHand style."
- Use visible vertices and Bezier control points.
- Control vectpors through Lingo.

2.6.4 Rich text and shocked fonts

Director 7 controls all text attributes and display anti-aliased text. Super compressed shocked font guarantee great looking fonts across platforms, browsers, or anywhere. Now developers can deliver high-quality, anti-aliased text that's editable while authoring or at run time.

- Edit rich, anti-aliased text at run time.
- Control text with Lingo.
- Deliver cross-platform (Macintosh and Windows) presentations.
- Embed super small, compressed fonts for reliable delivery (shocked fonts).
- Shocked fonts are approximately 75% to 85% smaller than TrueType fonts.
- Full backward compatibility is included.

2.6.5 Broadcast-quality animation

With standard animation features such as onion skinning, tweening, and ink effects, Director 7 provides an easy-to-use interface for creating high-quality animations.

- Support onion skinning, tweening, rotation, skewing, and more.
- Draw from casts of unlimited size.
- Provide fastest animation performance.

2.6.6 CD-quality audio

Director 7 studio can import and deliver the highest quality audio possible. Audio can be compressed as Shockwave audio (MPEG Layer 3) or non-compressed.

- Support AIFF, WAV, and SWA sound file formats.
- SWA provides for variable compression rates from 1:2 to 1:126.
- Macintosh sound editor is BIAS Peak LE.
- Windows sound editor is SoundForge XP.

2.6.7 True RGB support

To deliver the best quality color graphics possible, Director 7 supports RGB color through a new color picker with precision control via UI, hex, or % values.

- Customize the color space and use the new color wheel for added control.
- Choose colors based on RGB and hexadecimal numeric values.
- New color pop-up remembers your favorite 16 RGB colors.
- Sprite inspector enhanced to support new RGB values.

2.6.8 Integrated Web-safe palette

The Web-safe color palette guarantees consistent display in both preview and run time.

- Seamless browser display of colors is provided.
- Provides support for the Web 216 palette.
- Palette is directly available from the Palette, Paint, and Tools windows.
- Shockwave authoring is simplified.
- Eliminate the need to import additional color palettes, while guaranteeing optimal display in browser.

2.6.9 Universal import

Director 7 Shockwave Internet Studio imports over 40 multimedia file formats, including QuickTime 3, (QuickTime Virtual Reality), Flash 3, and animated GIFs.

- With universal import of audio, video, and graphical elements, Director gives you the power and flexibility to combine the most diverse set of media elements.
- Import over 40 multimedia file formats.
- Modify and control animated GIFs (Gif89a or Gif87).
- Play animated GIFs as sprites, either embedded or linked.

- Increase vector support and animation with support for Flash 3 (SWF) files.
- Apply new D7 features to Flash assets, including rotation, flipping, and alpha channels
- Rotate and mask QuickTime movies.
- Automatically display and navigate both panoramic and interactive digital video (QTVR).
- Control QTVR 2 pan, tilt, node, field-of-view, hotspot detection, and so forth.
- Import HTML text.

2.6.10 Immersive behavior library

Totally engage your audience by using these high-impact, special effect behaviors. Apply these behaviors by dragging from the new Director 7 Library palette onto most supported media types for quick and sophisticated sprite animation and graphic effects. Included are eye-opening behaviors that produce automatic rotation, scaling, skewing, and flipping. Easily control sprite effect parameters and whether sprites follow or avoid the user's mouse for truly compelling interactivity.

- Diverse range of animation effects for all sprites.
- Draggers effects that are controlled by mouse position and interaction.

- Graphic effects for color cycling and alpha channel manipulation.
- Behavior Lingo source is clearly documented for easy reading.

2.6.11 Multimedia hyperlinks

Multimedia hyperlinks extend traditional hyperlinks by easily jumping between text objects and any multimedia object like live animations, graphics, text, sound, or video. For example, you could click on the word "car" and instantly a picture of a car would appear and drive across the current Web page.

- Control branching and interactivity from any tagged element.
- Hyperlink to any Web site.
- Hyperlink to execute Lingo scripts or display any cast member.

2.6.12 Macromedia Fireworks

With a complete set of tools for bitmap and vector graphics, Fireworks provides an all-in-one solution for multimedia developers looking to create graphics in their presentations or Shockwave movies. The revolutionary Fireworks environment keeps everything editable all the time.

- Onscreen optimization for GIF, JPEG, and PNG files.
- Live Effects for drop shadows, embosses, bevels, and glows at the click of a mouse.

- Slicing tools for easy production of cast members from a single composition.
- Bitmap editing tools: brush, pencil, fill, clone, marquee, lasso, and crop.
- Vector editing tools: bezier, reshape, circle, star, rectangle, and line.
- Frames for GIF animations.
- Layers for document organization.
- Rollover states for buttons.
- Automatic production code for HTML tables, JavaScript rollovers, and image maps.

2.6.13 Intel Web Design Effects

Intel Web Design Effects create animated effects—such as smoke, fire, water, and even clouds, without requiring the developer to create each single cell. Web Design Effects works by applying mathematical operations to a single image, which alters individual pixels to create realistic animations. For instance, a blue color GIF becomes a rippling blue pond. A plain background (pictured) suddenly has wispy, transparent clouds floating by. The properties of these effects can be controlled through Lingo, Director's object oriented scripting language.

2.7 Coding approach

Good programming skills will produce a reliable and maintainable system. A good coding style always requires :

- Readability

  The source code should be able to be read by other programmers and also non-programmers without any difficulty. This requires :

  1) composition of comments
  2) organization of the overall program
  3) selection of identifier (variables and labels) names

- Good naming techniques

  This means that names given to variables, controls and modules should provide easy identification for the programmer. This naming convention is created with coding consistency and standardization in mind.

- Internal documentation in the source code

  Internal documentation in the source code is also important for a clearer understanding. This mainly refers to internal comments, which provide a clear guidance to understanding during the maintenance phase of the software development. Besides that, comments also provide the developer with a means communicating with other readers of the source code. Normally, a statement of purpose is included at the beginning of modules,

indicating the function of the modules and description comments are embedded within the body of source code is used to describe processing functions.

- Modularity

Modularity is essential need when programming because it reduces complexity and facilities change results in easier implementation by encouraging parallel development of different parts of a system. Software with effective modularity (independent modules) is easier to develop because functions maybe compartmentalized and interfaces are simplified. Independent modules are easier to maintain (and test) because secondary effects caused by design or code modification are limited, error propagation is reduced and reusable modules are possible. Software modularity is measured using two qualitative criteria, which are :

1) Cohesion

Cohesion refers to the internal "glue" with which a module is constructed. The more cohesive a module, the more related is the internal parts of the module to each other and to the functionality of the module. In other words, a module is cohesive if all elements of the module are directed towards and essential for programming the same function.

A cohesive module performs a single task within a software procedure requiring little interaction with procedures being performed in other parts of a program. Stated simply, a cohesive module should (ideally) do just one thing.

2) Coupling

Coupling is a measure of interconnection among modules in a program structure or the relative interdependence among modules. Loosely coupled modules have some dependence but the interconnections among modules are weak. Coupling depends on the reference made from one module to another, the amount of data passed from one module to another and the amount of data control one module has over another. The law of degree of coupling among modules results in an easier understandance and avoidance of errors which occur at one location and propagate through the system.

2.8 Coding style

Coding style is a important attributes of source code and it determines the intelligibility of a program. An easy to read source code makes the system easier to be maintained and enhanced.

2.9 Reviews on existing learning package

2.9.1 SPM Bahasa Melayu

This page was done by Encik Mohd. Zaki Hj Awamg Mat. His page contains information on paper I (Essay), paper II (as mentioned), paper III (Oral). The studies done by him is good , but it's too general. The explanations are merely on the format but it lacks on techniques. Although general technique are mentioned but its not sufficient. Even though he managed to cover a wide range of scope but the most important aspects are left out. That will be generating questions for the students' further understanding. He should have given examples and explanation on how to tackle and answer questions according to the needs of the questions.

http://www.geocities.com/College Park/Library/7079/bmspm.html

2.9.2 Kajian Panitia Bahasa Melayu

This page was done by Encik Ismail Mohd Salleh, only covers paper I and question 1 in paper II. He should have specified in one particular paper, as student would prefer to be systematic. Such studies could only be a overview to a student. More systematic and sufficient studies should have done as these researches are meant to be a guideline to prepare a student for this examination. His act might have created confusion as essay and summary is totally different paper and concepts. The motive is not achieved, as it won't help a student as mush as one needs.

Chapter 3

Planning

3.0 Planning

3.1 Achievement

Planning and developing stage consist of all the preparation needed to achieve the ultimate goal. The fundamental of planning and developing stage is to identify what is to be achieved. My research, first and foremost, prepares student to sit for the SPM Malay Language paper II. It also creates a complete revision pack for the students as it would help them to excel and to achieve their goals. Students would love to do little studies provided the information is reliable and sufficient. This module fulfills the required need from the student. Finally, a difficult and compulsory language paper was given a change of techniques and method as it was reformed to a computer literate based methods of studying.

3.2 Resources

Resources will be the necessary item, tool or person. Resources can include equipment, time, office space, people, technique and so on. The process model identifies how much of each resource is needed for each activity. [Kendall,1999]

For my web software development I will be :

1) using Macromedia Director 7.

2) referring to my supervisor, Miss Ow Siew Hock, all the time to get some idea and approval of my system.

3) surfing the net to get some information to improve my designing method to make it more attractive.

4) referring to books on SPM Malay Language paper so that I will be always alert of the different approaches available and which one really attracts the student's attention.

5) study on programming books especially VBScript which is related to integrate the database.

3.3 Project schedule

A project schedule describes the web page development cycle for a particular project by enumerating the phases or stages of a project and breaking each into discrete tasks or activities to be done. The schedule also portrays the interactions among these activities and estimates the time that each task or activity will take. Thus , the schedule is a timeline that shows when activities will begin and end, and when the related software will be ready.

[Davis,1993]

Please refer to appendix 3A to view my Project Schedule.

3.4 Work breakdown

An activity is a part of the project that takes place over a period of time whereas a milestone is the completion of an activity –a particular point in time. Thus, an activity has a beginning and an end, whereas a milestone is the end of a specially designated activity. Analysis of this kind is sometimes described as generating a work breakdown structure. For a given project, because it depicts the project as a set of discrete pieces of work.

[Pleeger,1998]

1.1 Survey complete
1.1 Documentation
2.1 Collect all data for explanation section
2.2 Collect all data for example section
2.3 Collect all data for exercise section
2.4 Collect all data for exam section
3.0 Design the out line
3.1 Put in the data in explanation section
3.2 Put in the data in example section
3.3 Put in the data in exercise section
3.4 Put in the examination section
4.0 Design the user interface
5.0 Testing

Table 3.1 Work breakdown in preparing the software

3.5 Process model

Building a process model and discussing its sub process helps me to understand this gap between what should and what is. In theory, the prescription of the way software development should progress and the description of the way software development is done in reality should be similar but not in practice.

[Kendall,1999]

The reasons for modeling a process:

1) It forms a common understanding of the activities, resources and constraint involved in a web page development
2) Creating a process model helps to find inconsistencies, redundancies and omissions in the process and in its constituent parts. As these problems are noted and corrected, the process becomes more effective and focused on building the final product.
3) The model should reflect the goals of development, such as building high-quality software, finding faults early in development, and schedule constraint.
4) Every process should be tailored for the special situation in which it will be used. Building a process model helps to understand where that tailoring is occurred.

3.6.1 Prototyping model

A prototype is a partial implementation of the final application. This enables you to check that the structure of the application will work and to finalize decisions about screen layouts. Once you have created the prototype, get other people to use it and provide feedback. The more problems that can be ironed out at this stage, the easier the subsequent coding and testing cycles will be. [Pfleeger,1998]

Please refer to Appendix 3B to view my process model

3.6 Transition diagram and Flow chart

We can view a system in a similar manner as a set of states where the system reacts to certain possible events. The system's behavior is interpret as a series of functions, the input to which is a set of conditions and an event, the output from which is a system action that results in the system's moving to the next state. We can depict this transition by drawing a diagram of the movement from one state to another. [Pfleeger,1998]

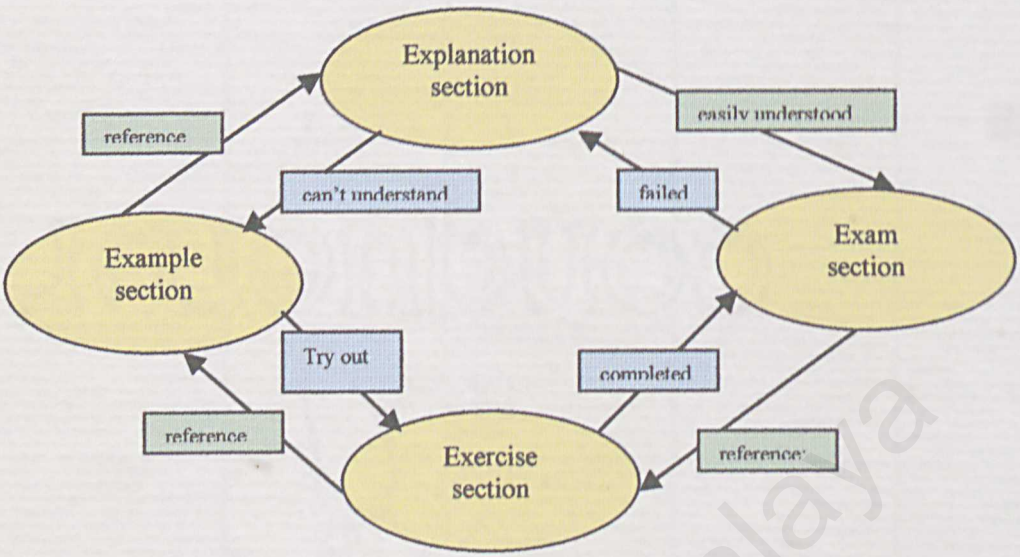


Figure 3.1 Transition diagram

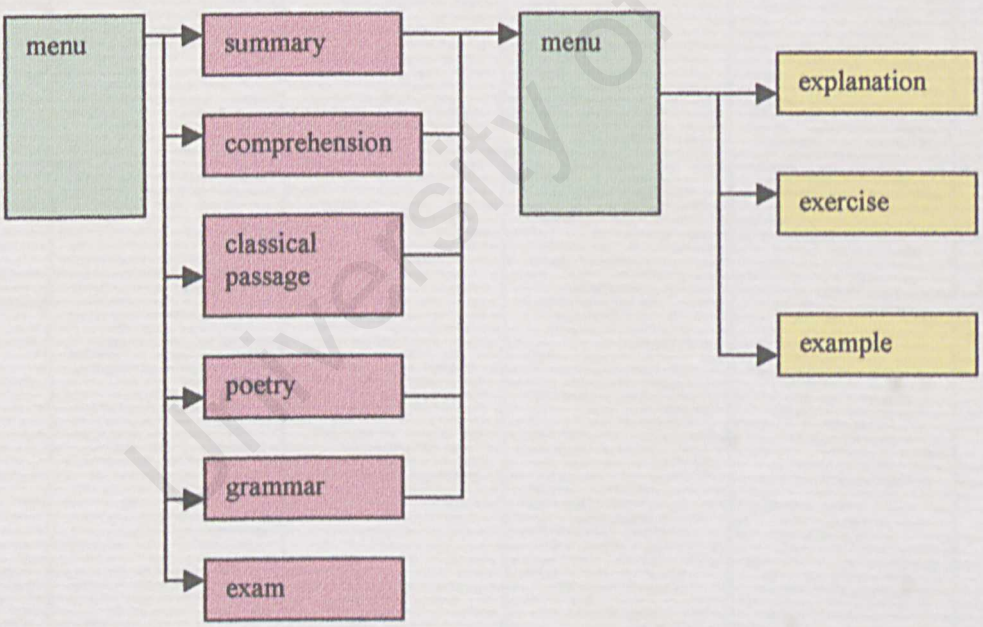


Figure 3.2 Flow chart

Chapter 4

Requirement Process

4.1 Requirement process

A requirement is a feature of the system or a description of something the system is capable of doing in order to fulfill the system's purpose. A functional requirement describes an interaction between the system and its environment . It also describes how the system should behave given certain stimuli. Meanwhile, a non-functional requirement or constraint describes a restriction on the system that limits our choices for constructing a solution for a problem.

4.2 Requirement elicitation

Requirement elicitation is an especially critical part of the process Various techniques used to determine what the users really want. Requirements can be differentiated into three categories.

i) requirements that absolutely must be met

ii) requirements that are highly desirable but not necessary

iii) requirements that are possible but could be eliminated

[Pfleeger,1998]

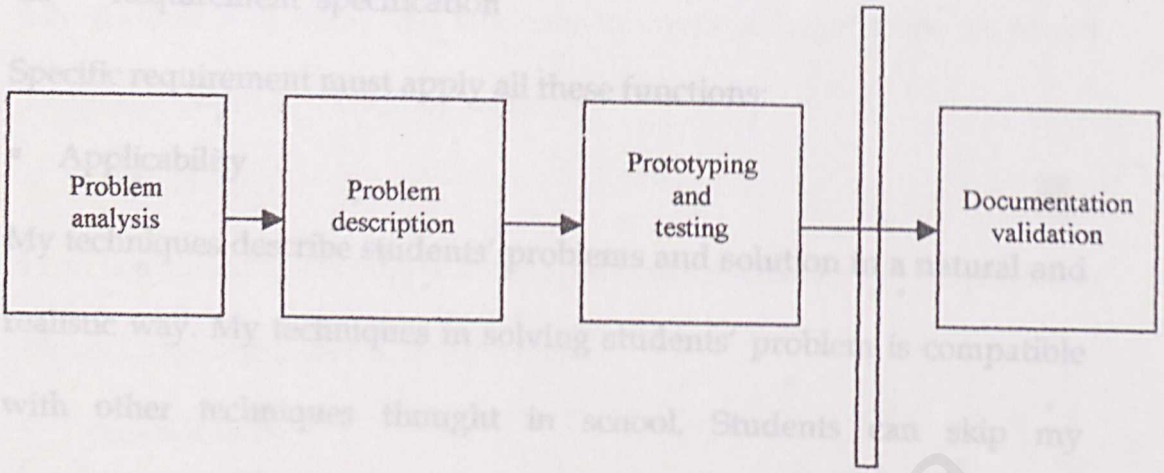


Figure 4.1 The process of determining requirements

I prepared a questionnaire and distributed among fifth form students back in my home town.

Please refer to Appendix 4A to view my questionnaire .

Outcome of it, shall be used to determine the requirements. Later in this section will be mentioned about my specific requirements.

My SPM Malay Language paper II Learning package will comprise the following features:

1) explanation section

2) examples section

3) exercise section

4) exam question section

4.3 Requirement specification

Specific requirement must apply all these functions:

- Applicability

My techniques describe students' problems and solution in a natural and realistic way. My techniques in solving students' problem is compatible with other techniques thought in school. Students can skip my explanation section and proceed with my exercise section with techniques learnt in school.

- Implementability

My approach can be easily translated in implementing it in real SPM examination. I also, make sure that I produce a well-defined interface for easy usage.

- Testability

It is so easy to manage, all the students have to use is the mouse. The specification can be tested for accuracy purpose.

- Checkability

Anyone who understand the underlying problems in Malay Lamguage paper II can check for accuracy.

- Maintainability

It is so easy to maintain and easy to change the techniques if my approach couldn't be understood clearly.

- Modularity

My method will allow the students to cover a large scope in Malay Language paper II, section by section.

- Verifiability

I can demonstrate formally that the specification satisfies the properties in Malay Language paper II, at each level.

- Tools maturity

Macromedia director 7 is a high quality and easy to prgramme. No training is needed to learn to use them, guidance from the book is more than enough.

- Looseness

My specification is complete and I will be covering the course contents of Malay Language paper II.

- Learning curve

A new user can learn quickly the technique's concepts.

- Technique maturity

My technique in answering the question is standardized, it may or may not be similar, compared to the techniques thought in school but definitely understandable.

- Data modeling

My data are arranged in a sequence and all the sections are related to each other.

4.4 Types of requirements

The requirements definition and specification describe everything about how the system is to interact with its environment.

4.4.1 Functional requirements

Interfaces

The input is coming from one user. It depends on the user's interest, that is in what section he is unable to understand and would like to go through mine. The output will sent only to the user who requested it. My data will be arranged accordingly to the section. For example, all the techniques will be in the explanation section and exercises will be in the exercise section. My explanation section will be brief and compact and less bragging.

Functionality

This web based learning package will help student especially those are going to sit for SPM examination, in conquering Malay Language paper II. As mentioned earlier, this page will consist of 4 section with different approach to help them understand better.

Operational

1) Explanation section will contain information about what SPM Malay Language paper II contains, how to tackle the questions, how to understand hidden meanings, mastering the grammar and understanding Malay Language paper II

i) Summary

- give a thorough explanation on how to summarize
- how to differentiate hidden and direct points
- the techniques used to summarize
- how to include introduction, main points, supporting points, suggestion and conclusion

ii) Comprehension

- what comprehension means
- range of comprehension
- where the text is edited
- length of the answer
- understanding the text in and out
- technique to answer the questions

iii) Classical passage

- what is it all about
- books and stories that are to be given priority
- understanding the passage
- how to interpret it to modern Malay

iii) Poetry

- how to tackle mainly on hidden meanings
- adequate explanation
- general guideline to understand

iv) Grammar and language skills

- language explanation
- mastering the grammar
- mainly on making sentences and context
- provide specification of a word and phrase

2) Example section is connected to explanation section. After giving an explanation, it will be followed by an example to make the explanation even clearer. For example, after explaining about how to tackle hidden question in poetry, a phrase will be given to support the explanation. It will be done through out the explanation in each section in Malay Language paper II.

3) After completing the explanation and example section, an exercise shall be given to give to test the effectiveness of my guideline

4) Exam section is to self test their capabilities in answering the question which is similar to the exact examination.

Performance

In order for this learning package to be effective, it is crucial that all four components be in good working order.

- Summary

    1. understanding passage in and out
    2. figures and extract information
    3. looking for main points
    4. summarize the whole passage without changing the actual meaning

- Comprehension
  1. understanding a passage
  2. understanding the flow of a passage
  3. tackling difficult words or phrases
  4. answering the question with proper grammar

- Classical passage
  1. understanding the story
  2. individual skills is required
  3. purely on exercise and experience

- Poetry
  1. language skills and technique
  2. understanding the word powers
  3. understanding personifications

- Grammar and language skills
  1. lots of reading
  2. millions of double meaning words
  3. proper grammar understanding
  4. rules and regulation in a grammar understanding
  5. all the active and passive phrases

4.4.2 Non-functional requirements

Physical environment

It is web based learning package, need Internet to access.

User and human resources

Students in fifth form, teachers who wish to refer to my guideline, and those interested will be accessing to my system. Different user will be having different IQ and skills, so depend on their interest to access to what section their wish to master in. My system will be very easy to use and the percentage to misuse my system is very high.

Documentation

Documentation has to be prepared through out the development process. Documentation should be in a book format and it's for the view of my friends, my supervisor and my moderator.

Data

My data will be arranged according to section and straight to the point. I will access to my system once a month to add in if I obtain and additional information. My data will be accurate and easy to understand because it was prepared after a thorough research.

Quality assurance

My system is reliable, available all the time, interoperatable, flexible and correct. When it comes to maintenance, I will have to just update and improve my system.

4.5 Software and Hardware requirements

The software and hardware that are required to develop this system are:

Hardware:

Pentium MMX PC with CD ROM (or higher)

Sound Card

Scanner

Microphone

Speaker

Software:

Macromedia Director – interface and processing

Paint Brush and Photoshop 5.0 – creating and editing graphics

Animagic Gif 32bit – animation testing

Microsoft Windows 95 (or higher) – operating system

Microsoft Windows - documentation

Chapter 5

System Design

5.0 System Design

Design is the effort that is responsible for creating a detailed blueprint of the multimedia title. The design document is an essential tool for developing and organizing the elements of design.

5.1 Methodology

The Rapid Application Development (RAD) strategy was selected for developing this project. This approach was adapted for various factors:

1. Multimedia learning packages require only a small amount of background processing as more emphasize on the user interface and the data flow within the program. The storyboard section of the design document shown in figure 5.1 was used. This path is defined in such a way as to compel the audience into the piece, carry them to its fullest impact, and finish the experience so that they can hold and remember it in the context of their lives.

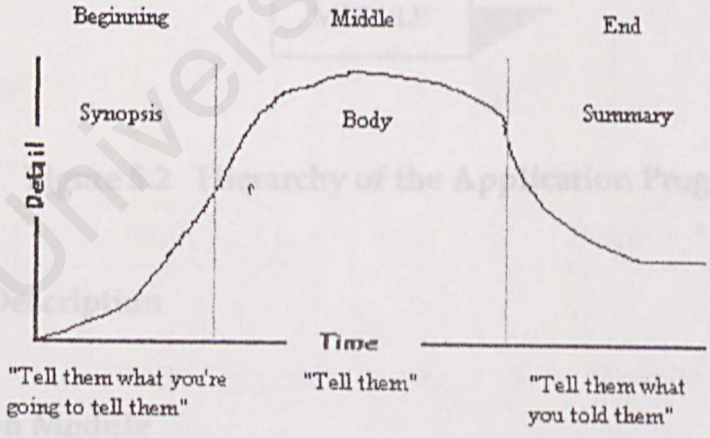


Figure 5.1 : Story Board Design

2. Iteration is an integral feature of the prototyping approach. Prototyping provides a tangible system to work with instead of abstract specification that are difficult to visualize. Useful feedback was obtain in short time and not much effort was lost on ineffective screen design and concepts that will not work successfully.
[Kendall,1995]

5.2 Hierarchy of the Application Program

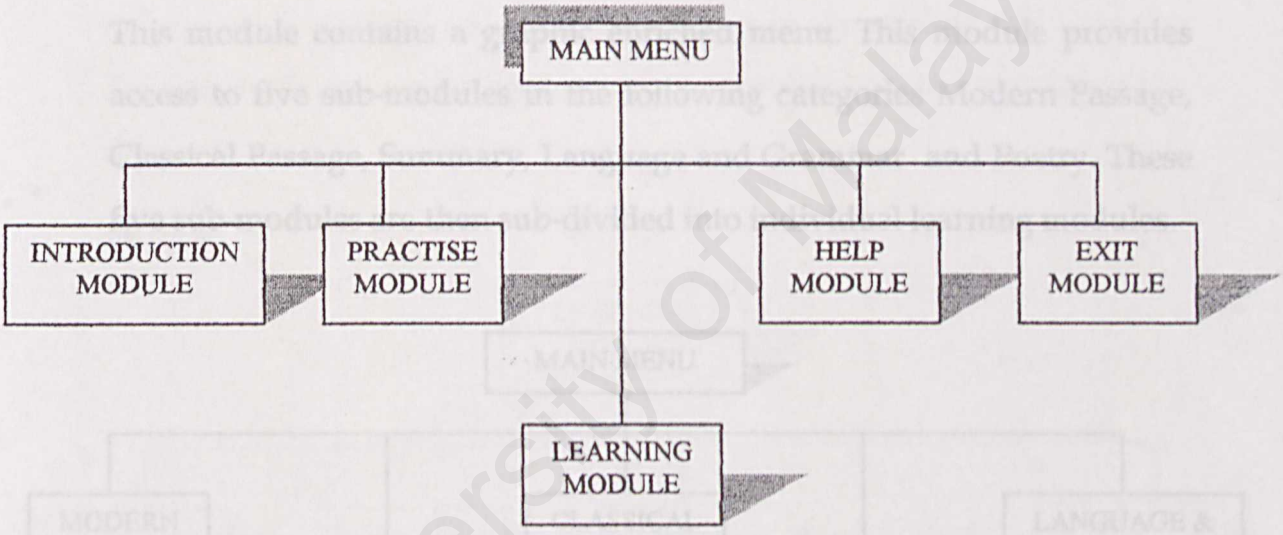


Figure 5.2 Hierarchy of the Application Program

5.3 Module Description

5.3.1 Instruction Module

This module contains instructions for the user to use the program. It also contains details about the title, designer and reason for developing the program.

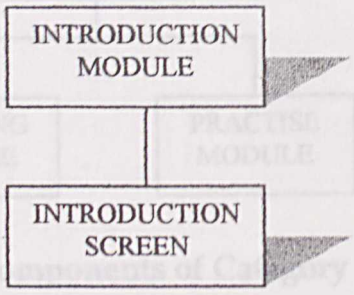


Figure 5.3 Components of Introduction Module

5.3.2 Main Menu Module

This module contains a graphic enriched menu. This module provides access to five sub-modules in the following categories Modern Passage, Classical Passage, Summary, Language and Grammar and Poetry. These five sub-modules are then sub-divided into individual learning modules.

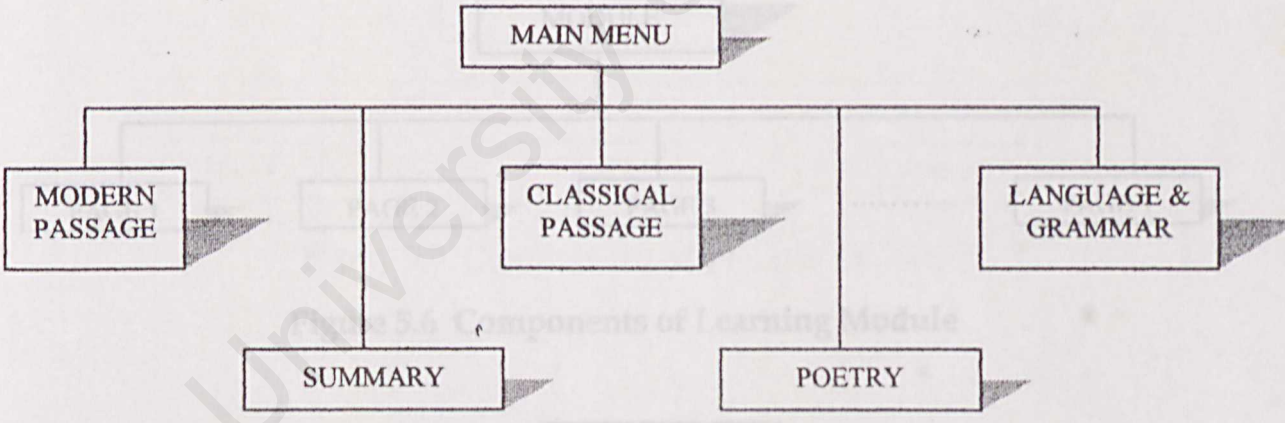


Figure 5.4 Components of Main Module

All the above categories contain a sub-menu for the user to choose if they want to go to the learning module or the exercise module.

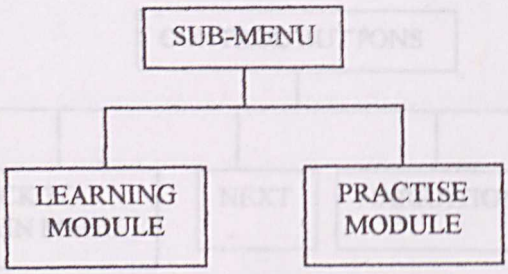


Figure 5.5 Components of Category Module

5.3.3 Learning Module

A learning module starts with a category menu that contains all the techniques in tackling the questions. A page in the module will have the dos and don'ts in answering this paper. As well as, control icons to guide the user.

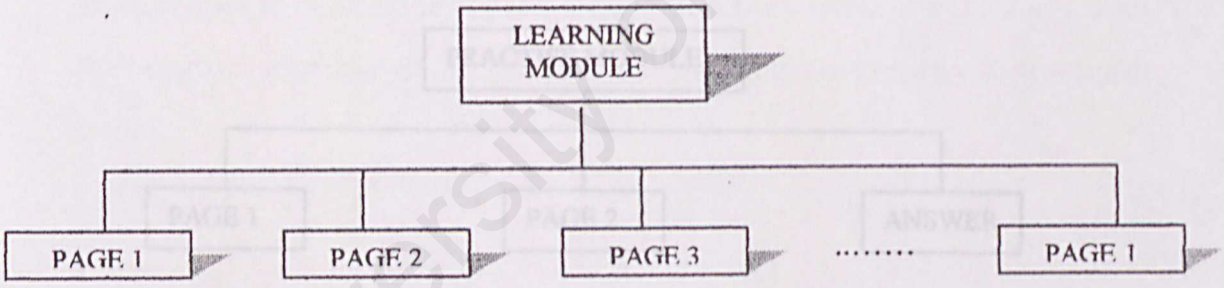


Figure 5.6 Components of Learning Module

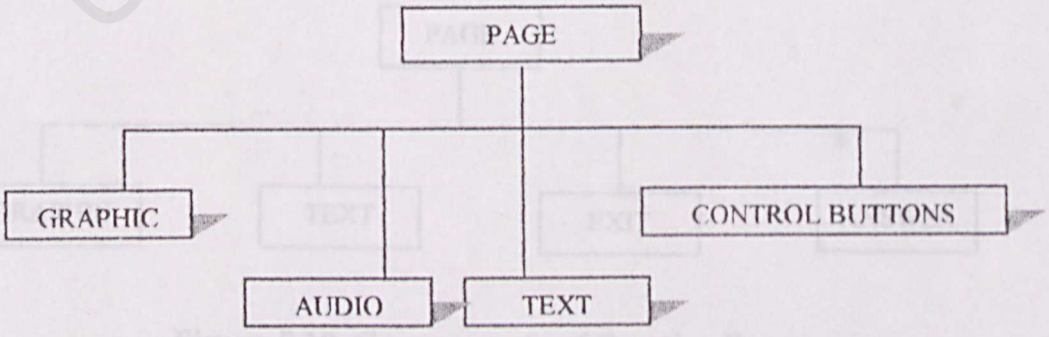


Figure 5.7 Components of a page in Learning Module

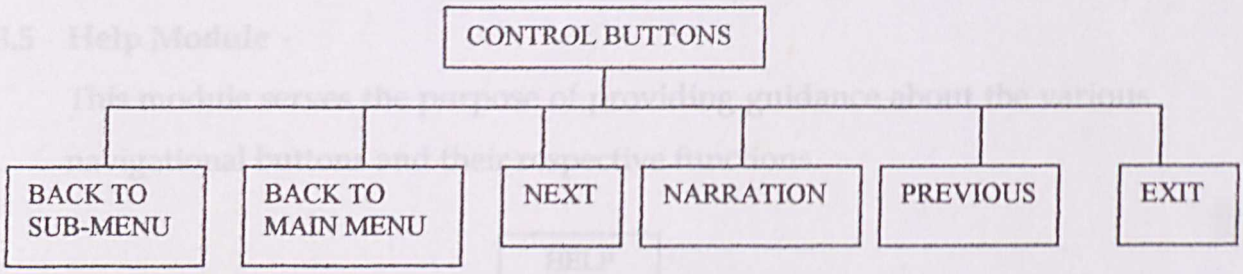


Figure 5.8 Components of Control Buttons

5.3.4 Practise Module

This module displays an exercise. The passage is given and the user is suppose to read it and answer on his own. Only after the answer is prepared he can check for the correct answer by clicking the answer hyperlink. The user can exit the program at any point of time.

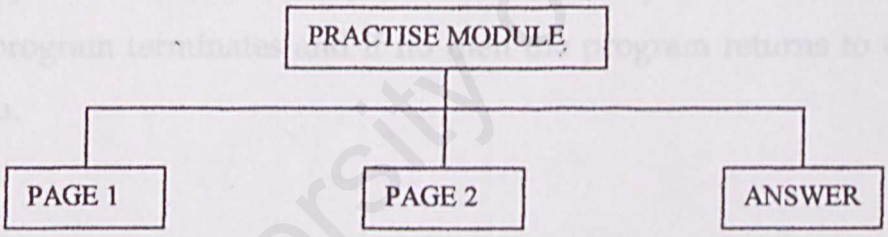


Figure 5.9 Components of Practise Module

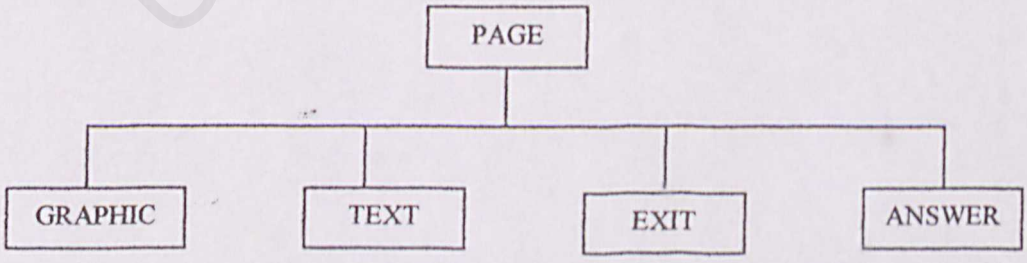


Figure 5.10 Components of Practise Page

5.3.5 Help Module

This module serves the purpose of providing guidance about the various navigational buttons and their respective functions.

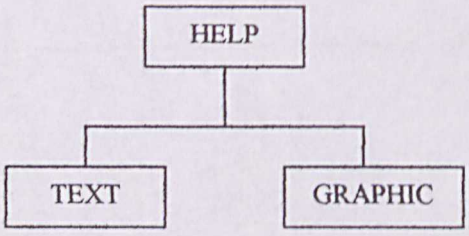


Figure 5.11 Components of Help Page

5.3.6 Exit Module

This module enable user to terminate the program. A message screen will prompt user to confirm if he/she is sure that they want to exit. If yes then the program terminates and if no then the program returns to the main menu.

Chapter 6

System Development and Testing

6.0 System Development and testing

In this System development phase, the coding, testing and documenting of individual movies took place.

6.1 Program development

A program in Director 7.0 is known as a movie. Program development involved creating the Lingo scripts and screens that are needed to satisfy the Learning Package processing requirements. The program development will consist of five steps:

Review the program documentation, design the program, code the program, test the program and complete the program documentation.

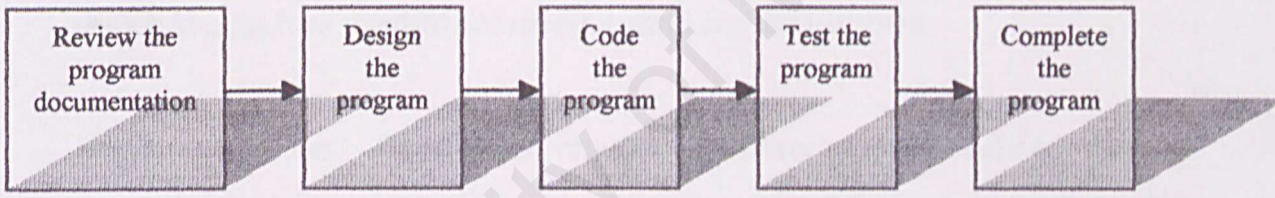


Figure 6.1 Program Development

6.1.1 Review the program documentation

The first step would be to review the program documentation. The program documentation included process descriptions, screen design. The materials were being present to the user using the 3M format of teaching.

6.1.2 Design the program

In the logic development of the program, the use of program design tools, flowcharts used. Here the logical flow of information was drawn out to ensure that the control was past to the correct modules.

6.1.3 Code the program

Before the coding could be performed, multimedia files (graphics and text files) were created. Graphics files were scan for many sources and edited in Photoshop 5.0 and paint brush to ensure they were anti-alias and their size kept to a minimum. Graphics for decoration were also obtain from the internet. Graphic files for the object, alphabets and navigation button were sorted and arranged in external cast files. External cast files were used as these files can be shared by multiple movies thus reducing storage space (duplicate files are not kept).

Audio files were created using Microsoft Sound Recorder and edited in SoundEdit 16. The size of the audio files were still large, thus the files were then compressed using Macromedia Xtra for Shockwave Audio which is a feature used to compress sound for the internet.

Most of the text files were created in Director and others were combinations of graphics files to improve attractiveness. A variety of fonts were used and save into the internal cast of a movie to ensure that the software could on different machines that did not support these fonts.

Coding includes creating the script and layout of the screens that implement the program design specification. Coding in Director makes usage of a Stage, Score, Cast (external and internal) and Lingo scripts. The movie uses standard screen size, which is 640 x 480 pixels. Different backgrounds and screen designs were used to ensure that the course-ware would remain attractive. The cast, as mentioned earlier, was used to organize all the multimedia files. Common alphabets, control buttons, text and backgrounds were stored in external cast. Internal cast were used for files that were used only in that movie.

The score is a chart showing what members appears on the Stage at what times. The score consist of Frames and Channels. A frame is an instant of time in Director. While working on a movie, the Stage shows a single frame. While the movie is animating, the Stage moves through frames to create the visual effect of animation. The channel is a numbered position in the Score. The Score has channels 1 through 1000, as well as a few special channels at the top. Which channel a sprite is in determines whether it gets drawn over or under another sprite.

Lingo scripting was used to writing the program instructions. Three types of lingo scripts were used, the first is the movie script that is used to control the entire movie, the second, frame script that were used to control a frame (located in the Score) and the third script, behavior scripts that were used to control sprite.

6.1.4 Test the program

This step will involve making sure the program functions correctly before the program is actually used by the user. Unit testing will be used to eliminate both execution errors as well as any logic errors that might exist. Unit testing was performed by testing all the being played and there were no typo errors exists. Then testing was perform on the movie to ensure that the pages were linked correctly.

6.1.5 Document the program

In order to successfully operate and maintain or enhance this application, proper, accurate and complete documentation was necessary. Proper naming technique were used to ensure that no redundant names were used (as this causes problems in Director). Lingo scripts were documented.

6.1.6 Documentation

End user Documentation

End user Documentation (User Manual) will be the user guide to assist the student on their initial learning and their on-going use. It will involve:

- The major features of the system
- How to operate these features

6.2 System Testing

System Testing is a critical element of software quality assurance. System testing will ensure the system is running according to its specifications and meets the users requirement and expectations. System testing can be considered fault identification process that determines which fault caused the failure.

[Pfleeger,1998]

Director 7.0 provides several debugging tools to help find error in logic flowlines and syntax. By using the Movie script stage which has Toggle breakpoints, StepInto and StepOver scripts enable effective checking or compiling of the script.

6.2.1 Unit testing

Unit testing focuses on the smallest software unit whereby individual components are tested independently, without other system components. Bottom-up testing method was used to validate and verify the working functionality of the lower unit before proceeding to the higher level units. Each cast was tested. Graphic casts were tested to ensure that they were anti-alias and did not contain unnecessary colors of lines that spoilt the attractiveness of the graphic. Animation casts were checked to ensure that they are following the correct path. Text cast were checked to ensure the spelling of the words were correct.

[Pressman,1992]

6.2.2 Module testing

A module was viewed as a movie in Director 7.0. Module testing was carried to ensure that each page of the movie, which consist of as a collection of dependent components such as object class, an abstract data type or some looser collection of procedures and functions worked properly. An example of this would be to test each page of practice module and then test the flow of that page to the next page. Basically testing at this stage was done to ensure the correct flow of an individual movie, events and navigation.

[Gross,1999]

6.2.3 Link Testing

This is also known as Integration Testing. The integration and the interfaces between the modules is tested i.e. the link between the seven movies were tested. A bottom-up approach was used here, so that each module was tested without propagating the errors in other modules. Despite this approach, when changes were made to the prototype, unforeseen errors emerged. Debugging the software, required patience and time. The use of the debugging facilities provided by the Director, it was possible to identify the errors and eliminate them.

6.2.4 System Testing

The entire software was tested using students. A selected group of people representing the intended user group was used to carry out this testing. This was conducted during the prototyping stage of the development and after the system was tested. The aim of this was to check out if the prediction reactions to the propose course-ware were met by the users.

The prototypes created early in development were not suitable for the novice student. Thus many features were simplified and standard controls were introduced. More animations were added to attract the students' attention. The final system testing was perform to ensure that all processing options, output information, and other components were verified by the students to ensure the system functions correctly. The major objectives of the system testing are:

1. To perform a final test of all programs against the design specification.
2. To guarantee that the end user can successfully interact with the software.

[Pressman,1992]

6.3 Evaluation

Formative Evaluation

Formative evaluation was carried out during the development phase, to ensure the courseware was effective.

Two types of formative evaluation were carried out during the development with the users to obtain response and feedback.

They were:

1. one-to-one

The user of the system operated the system individually after being thought the basic of the course-ware. The user was then observed. The user was then interviewed to see, if he/she had learn from the course-ware.

2. small group

This evaluation was conducted with the help of a teacher and her students, she demonstrated the software to her students and then quiz them on the material. This was a very effective method for obtaining feedback.

Findings:

The first two prototypes, were unsuccessfully as the navigation buttons were not standard and there was too much information on a page. The pages had been set to display more than one information at a time and the prototypes were confusing for a student to use independently thus the prototype was correct to follow the traditional method of teaching that use one information at a time.

6.3.1 Multimedia evaluation

Music, audio and special effects

1. Was the audio smooth and clear?
2. Did the audio/special effects coincide with visual materials?
3. Do the special effects contribute to the application message?
4. Is the background music appropriate, is it distracting?

Findings:

Audio help users to understand the instructions, as they were still unable to read, but on second and third round of practice, the student was familiar with the standard button. The musical background worked poorly on slow computers and was found to be distracting thus ii was removed from the course-ware. Special effects, worked well with users and the occasional use made the software attractive. Some adjustment were made to the audio files, to ensure clarity of the sound. But some files had to be compromise due to the size of the files.

6.3.2 User interface Evaluation

1. Has sufficient space been allocated for the touch areas?
2. Have colors and graphics been planned to support visual acknowledgement?
3. Does accompanying audio match the graphics?
4. Does the highlighting enhance visual effect?
5. Are the controls standard?
6. Does the user easily master the use of the controls?

Findings:

Early prototypes prove to be unsuitable for children, due to too much information on a page despite the use of standard controls. Adjustments were made to standardize each movie and the uses of standard controls were used in all movies. The users used these standard controls very successfully. The highlighting used in practice modules enhance the visual effect (was added after the second prototype). It was noted that sufficient touch area was available for the user. This was important as the user is still learning to master the use of the mouse. User was not very happy with the use of the keyboard, it was discovered that they used forward and backward keys.

Chapter 7

System Evaluation

7.0 System evaluation

System evaluation is the process of identifying the strength and limitation as well as the possible enhancements to the project. This section will also highlight the knowledge gained and some of the problems faced while developing the system and the action taken to over come them. [Kendall,1995]

7.1 System Strength

1. A professional Graphical User Interface (GUI)

The GUI in this software is very suitable for students, as the professionalism can help gain confidence of the student as they use the software. Standard buttons and icons kept frustration and confusion to a minimum thus allowing for faster learning.

2. Interactive Interface

The user has total control over the navigation thus allowing the user to traverse the web of information. The user is able to navigate the software can be used like a book and secondly navigation is carried out using hyperlink.

3. Help Instruction

The users are still novice in reading. The program caters for this by providing visual help. Standard buttons are used for visual help .

4. Operation System Interface

This software runs on the Windows platform, which is the most popular and common operating system used in Malaysia.

5. No installation Required

This software runs from the CD and does not require the user to install any files on the hard disk. Many students found this to be a very pleasing feature.

6. Language Used

The software is oriented in Bahasa Melayu. There are handful of Bahasa Melayu software available in the market for students thus making this software quite popular with parents despite its weakness.

7. All Choices of Categories

This software has five categories: Modern Passage, classical Passage, Poetry, Summary and Grammar and Language. It contains more than hundred pages and each page is complete with pictures and text as well as animation.

8. No keyboard skills required

This is a very pleasing factor for the users who are mostly beginners. Navigation through the mouse is master quickly as the user only need to point the cursor on the bottom and click.

9. User-friendly Interface

The software uses a user-friendly interface which is easy to use. A wonder feature of multimedia packages. Standardize control buttons, images and text.

10. Self pacing an active Learning

User are able to go through the lesson at their own pace. A user learns according to their mental ability. They are able to review the same as many times as they please.

11. Audio

The inclusion of audio in the learning gives more comfort as to read and read to understand. This feature makes the software more attractive.

7.2 System Limitation

1. Timing problem

Changing screen and change of cursor depends on the speed and the amount of available RAM in the computer. Slower computers take a slightly longer time to load them.

2. Insufficient questions

There are only a few questions in the practice module. They are sufficient for novice users but as the user becomes more familiar with the software, more questions are required.

3. No quiz module

This would make the software more interesting. (Was unable to complete this due to non-objective questions.

4. No print function

The user is unable to print out the content of the software.

5. Compromised quality of audio

Most audio files were compress to reduce storage space. This however produced poorer quality sound as trade off.

7.3 Future Enhancements

"Bahasa Melayu SPM kertas II" can be further improved to make it a more effective educational software. Following are some suggested improvements.

1. Administrative Module

An Administrative module can be incorporated into the system. This would enable adults to keep track and monitor the students. Templates built so that the software can be updated from time-to-time.

2. Enable to print

A windows-based print function should be included into the system. Allowing the adult and students to review the material without using the computer.

3. Video files

This software can be further made attractive by adding video files.

4. Web enable the software

This can be achieved by converting the software into Macromedia shockwave files and running each movie separately.

7.4 Problems and solutions

Various problems encountered throughout the development of the system.

◊ Large size of Graphic files

Problem:

Large amount of storage space was required to store the graphic files. More storage was required when the movies were being created. Backup became a problem.

Solution:

Zip tapes were used to store the graphic files. Backup files were kept on zip tapes to ensure that if the computer crash there would be a copy of software.

◊ Insufficient knowledge on multimedia concept

Problem:

Multimedia concepts of incorporating graphics, and animation are new to me. Many features used in earlier prototypes were not suitable for the students. Many conflicts with database occurred.

Solution:

Reference material was read, help was obtained via bulletin boards on the internet. Software was tested again and again.

◊ Difficulty in creating the animation and graphics

Problem:

It was very difficult to obtain smooth animations. Most graphics obtained were not anti-alias and were not in standard form.

Solution:

Animations were kept simple. Some graphics were scanned while most of the graphics were edited pixel by pixel using Paint Brush and Photoshop 5.0.

◊ Difficulty in finding discussion members

Problem:

Very few of the students were working on their WXET 3182 thus I was unable to find a partner to work with.

Solution:

Used Macromedia on-line discussion room and bulletin board, that was used to post problem which were solved by other designers.

◊ Large Audio files and Compatibility problem

Problem:

The software contains many audio files that were large in size despite being edited and modified using SoundEdit 16. The large size was cause by narration need for the software. These files had problem running pn different platforms.

Solution:

The .wav files were converted to Shockwave files (.swa) that are highly compressed and thus reducing the file size dramatically. The software was tested on different computers to ensure that audio worked on different platforms.

7.5 Knowledge and Experience Gained

Through out the development of this system, several valuable experience and knowledge was gained:

- ◊ Learn additional languages – Macromedia Director 7.0 and Photoshop 5.0
- ◊ Techniques required to plan and develop multimedia packages.
- ◊ Method and skills in finding information and gathering data, on-line discussion, Bulletin boards.
- ◊ Learn to work independently and cope with tension and stress also sleepless nights.
- ◊ Skills in writing documentation, keeping track of progress and files.
- ◊ Organization of materials-files, proper naming methods etc.
- ◊ Skills in Time Management
- ◊ Patience when working with student at their level and speed.

7.6 Conclusion

'Bahasa Melayu SPM kertas II' Learning package for SPM students has finally been completed successfully. The system has met its objective which is to prepare the students for the SPM Malay Language paper II with the use of attractive user-friendly interface and at the same time introduce the basic computer skill of using the mouse.

The software was found to be very successful with student who use the traditional method of learning (3M Learning) and were novice in computer skills. The software still have limitations which can be improved using the future enhancements recommended.

The knowledge obtained from doing this project was tremendous. Many skills were acquired. Time management skills were very important as this project required building prototypes, testing them and only then could the software be fully developed and after which more testing was carried out. More than one software knowledge was obtained. Concepts on multimedia application development were understood more clearly and put into practise.

Overall this project is an experience that has made me a more mature person with a lot of patience in both authoring and working with students as well as provided me with a fountain of knowledge.

REFERENCE

Azizul Rahman bin Abdul Rahman and Samian bin Sawiyo. 1998. *Siri Pelangi Fokus Bahasa Melayu SPM.* Pelangi Sdn Bhd.

Azman Johari and Kim Swee Tin. 1998. *Skor A dalam SPM Bahasa Melayu.* Pelangi Sdn Bhd.

Davis, A.M. 1993. *Software Requirements: Objects, Functions and State.* New Jersey, Prentice-Hall, Inc.

Director 7 Shockwave internet studio features (immersive features). *http://www.macromeida.com/software/director/productinfo/newfeatures/immerse*. Html. 1999. Macromedia Inc.

Gousalya Siva.1998. *Multimedia with Director.*

Gross Phil.1999.*Macromedia Director 7 and Lingo Authorized.*California, Macromedia Press.

Keith Brophy Sams. 1998. *Teach yourself VBscript in 21 days.* Macmillan Computer Publishing.

Kendall, K.E. 1999. *System Analysis and Design.* New Jersey, Prentice-Hall, Inc.

Levin, Carol, Multimedia Tool for Teaching. *PC Magazine,* September 1993.

Macromedia Director 7. *Http://www.idg_net/crd_director_9-125670.html.* April 1999. Macworld Publishing.

Macromedia Director Home Page, *http://www.macromedia.com/* April 1999.

Multimedia Tools. *http://www.swiftsoft.de/mmtools.html.* Last updated: 10 March, 1999. Swift Software.

Rupe, Vickie S. 1986. *Journal: A study of Computer-Assisted instructions, its uses, effects, advantages and limitations.*

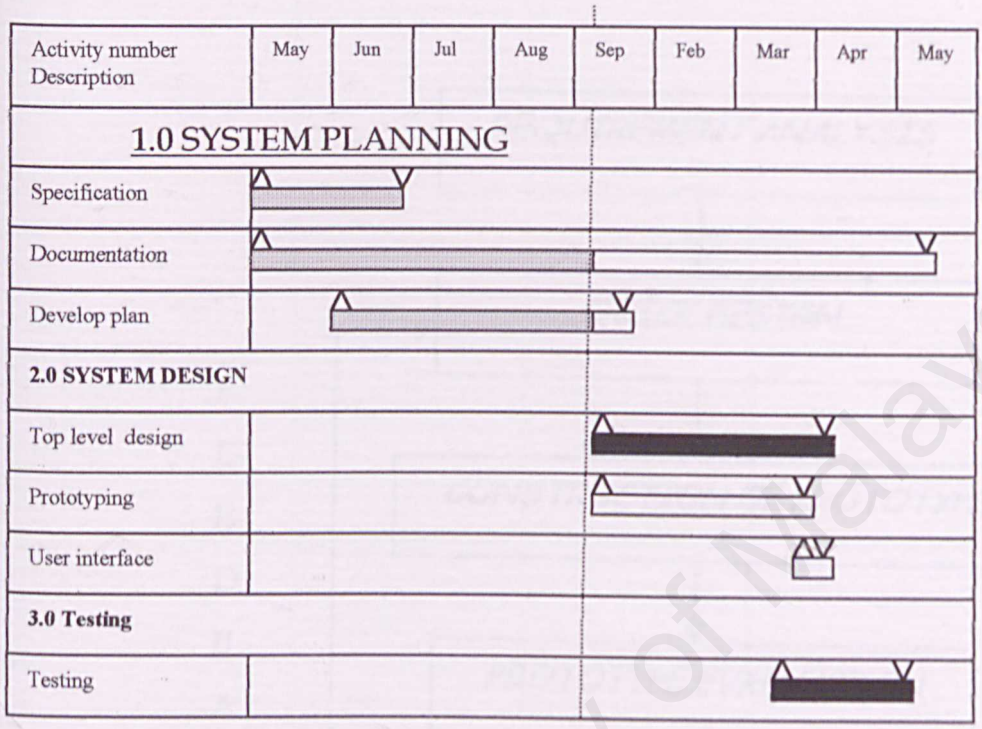
Sharifah Noora Syed Tahir. 1998. *Multiuji Bestari Bahasa Malaysia PMR, Sasbadi.*

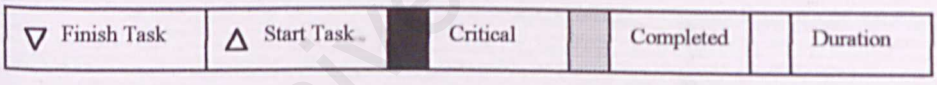
Shari Lawrence Pleeger.1998. *Software Engineering, Theory and Practice.* United States of America, Prentice-Hall International inc.

Using Multimedia in Education, *http://fps.uwaterloo.ca/projects/eng04.html#inter* ,1993

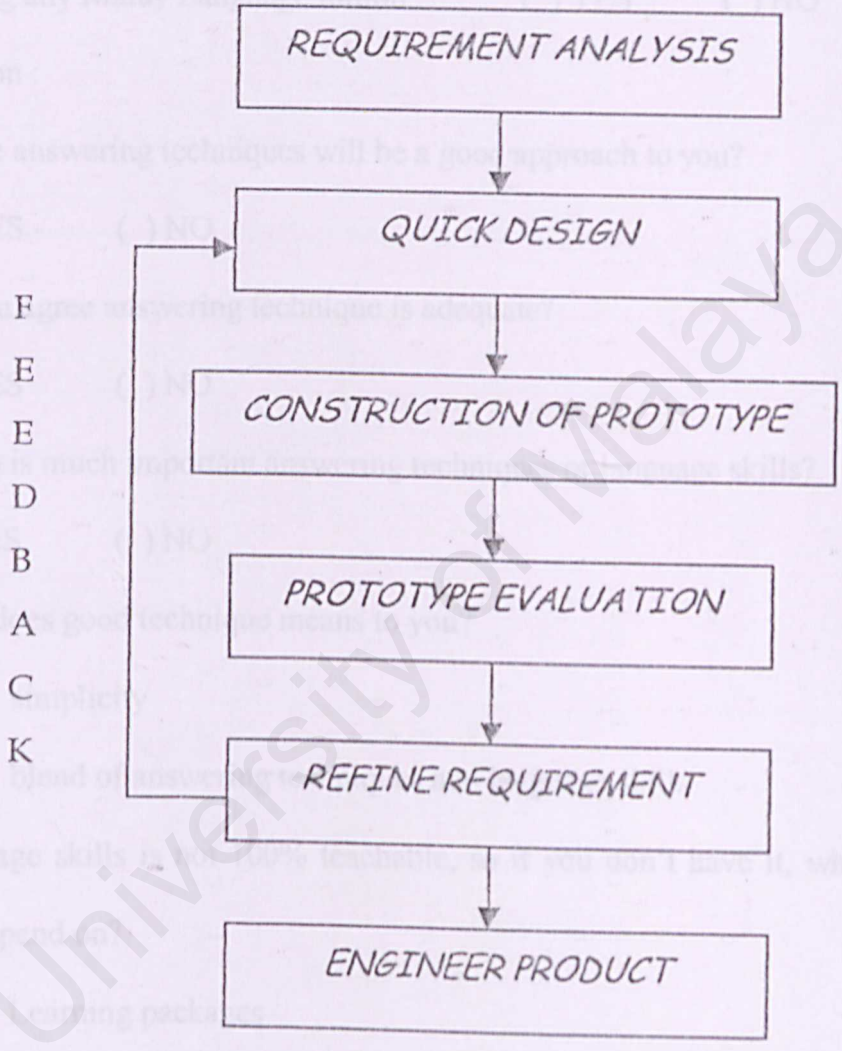
Vaughan, T. 1996. *Multimedia, Making it work.* McGraw Hill.

Appendix 3A : Project Schedule





Appendix 3B : Process model



Appendix 4A : Questionnaire

Form :

Grade obtained in Malay Language Paper in PMR :

Are you taking any Malay Language tuition : ( ) YES ( ) NO

In your opinion :

1) Do the answering techniques will be a good approach to you?

( ) YES ( ) NO

2) Do you agree answering technique is adequate?

( ) YES ( ) NO

3) Which is much important answering techniques or language skills?

( ) YES ( ) NO

4) What does good technique means to you?

a) simplicity

b) blend of answering techniques and language skills

5) Language skills is not 100% teachable, so if you don't have it, what resources you depend on?

a) Learning packages

b) Tuition

c) School teachers

d) Web

6) What is the main problem in Malay Language Paper II ?

a) Answering the questions

b) Understanding the questions

7) Which section in Malay Language Paper II is difficult for you to answer?

_____

8) Do the varieties of sections in Malay Paper II create confusion?

( ) YES ( ) NO

9) Have you tried using Computer-Aided Learning (CAL)?

( ) YES ( ) NO

10) If yes, what is your opinion?

_____

_____

_____

11) Does it need to be improved?

( ) YES ( ) NO

12) If yes, in which section?

_____

Part 1 : Introduction

SPM Malay Language learning package developed for SPM (Sijil Pelajaran Malaysia) students. It can be used as a self-study material or teaching tool in schools.

SPM Malay Language learning package focuses on the proper preparation methods by providing guidelines and answering techniques to the students. It is a comprehensive tool that used to learn Malay Language effectively. The notes provided are from various researches whereas the exercises aim to help students to master the language well. The students are able to view their own performance and prepare themselves in specific topic they are weak in.

Age : suitable for all SPM students and teachers.

Manual Organization

This manual contains the following information:

Part 1: Introduction

Part 2 : System requirements

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Part 2 : System Requirements

Minimum computer requirements needed to run the software are:

- Pentium MPC
- Minimum 16 MB of RAM (Recommended > 16MB)
- SVGA with 640x480, 256 colors display capability (Recommended > 256 colors)
- Multimedia devices – Sound card and speakers
- Operating system : Microsoft Windows 95 and above

Part 3: Startup Instructions

No installation is required!!

This software runs from the CD-ROM.

Instructions

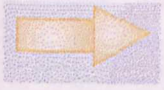
1. Insert the CD into the CD-ROM drive.
2. Double click the **My Computer** icon.

3. Select the **CD-ROM drive**.

4. Click on  to start the program

Part 4 : Control Icons

Click on this icon to listen to the narration.



Click on this icon to go to the next screen.

Click on this icon to go back to the previous screen.

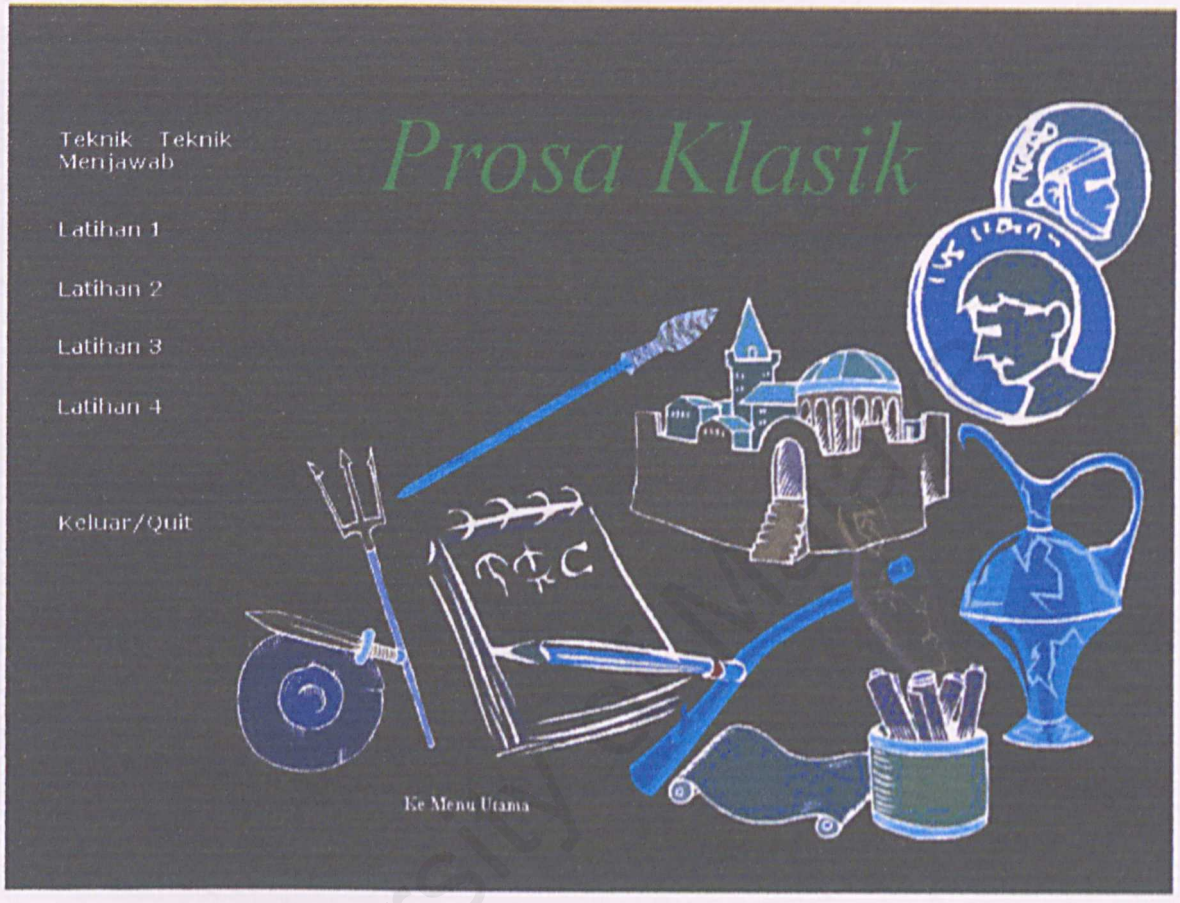
********* Click on this link to go to the screen wanted.

* represents words

Part 5 : Main Menu Instructions

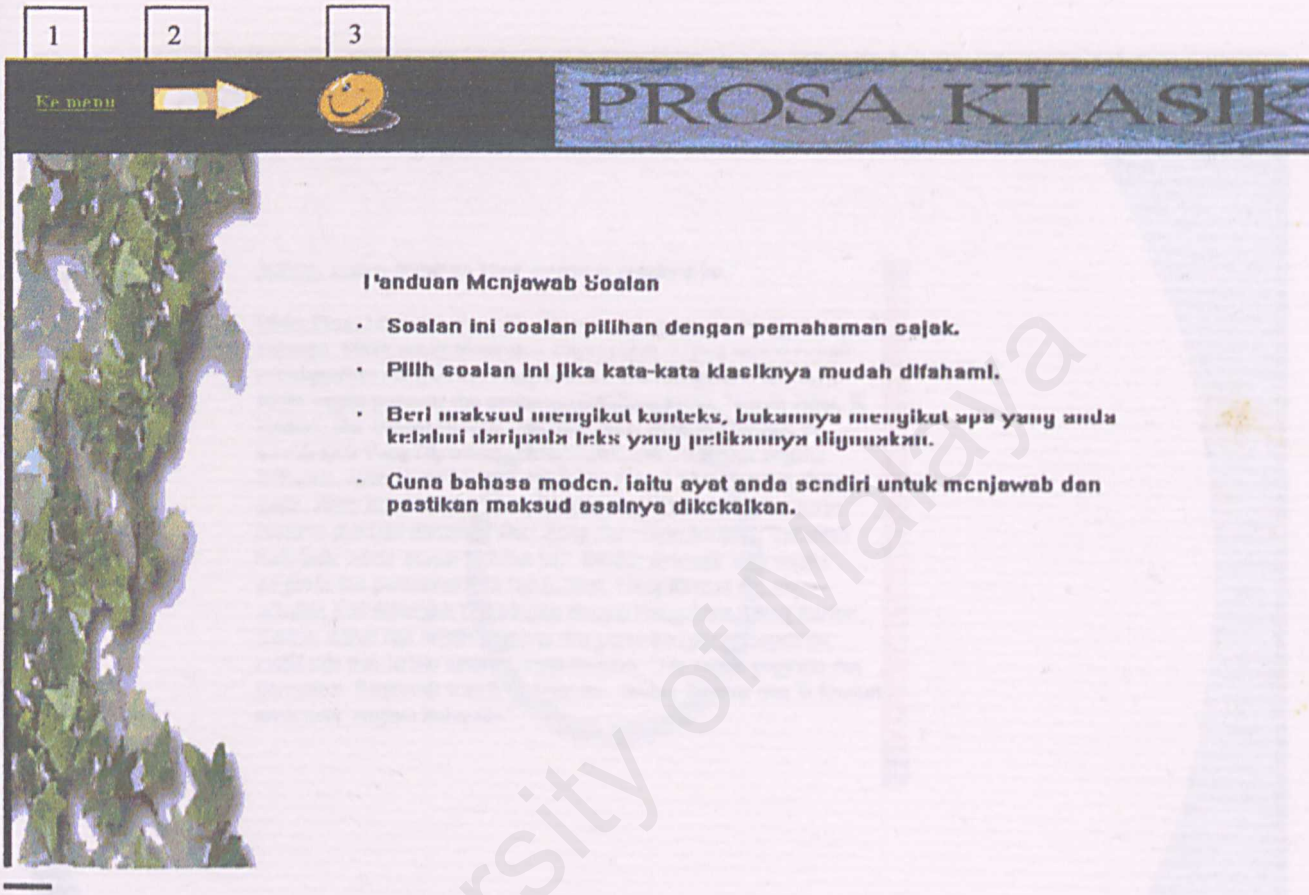
The above is the Main Menu of the software. This is the second screen when the program is running. They can choose the related topics and clicking on the links. They can also exit the program or seek for help.

Part 6 : Sub Menu (The category Main Menu)



Choose to learn or to do exercise to evaluate understanding on the material on the chosen category. If you accidentally click on this Main menu category you can go back to the Main Menu by clicking '*Ke Menu Utama*'. If you wish to exit the program to exit the program then click on '*Keluar/Quit*'.

Part 7 : Learning Instructions



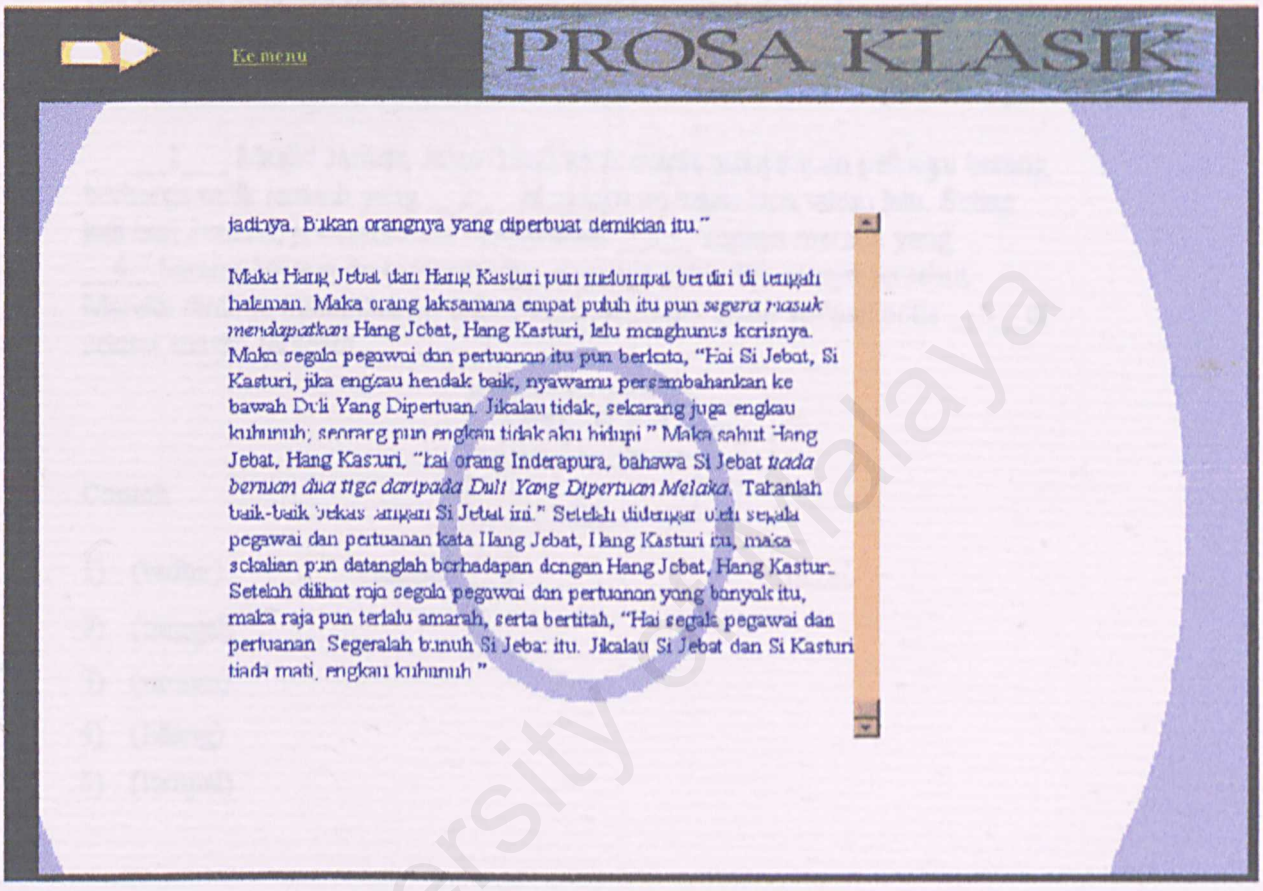
The above screen is a sample of the learning menu screen. It is the 'Prosa Klasik' Category screen. The sub-menu in the order categories have the same controls as this screen. The controls are described below:

Click on 1 to go back to the sub-menu.

Click on 2 to go the next screen.

Click on 3 to hear the narration.

Part 8 : Exercise Instructions



This is a sample of an exercise question. This screen is obtain when the exercise hyperlink is click on the category Sub-Menu.

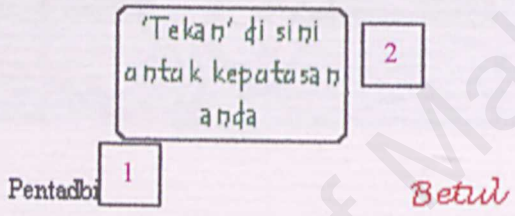
1) Read the passage carefully
2) Click the next screen button and the question will appear.
3) Prepare your answer in a piece of a paper then click the answer link to check the answer.

Sila taipkan imbuhan yang paling sesuai untuk diisikan dalam tempat kosong.

Sila taipkan imbuhan yang paling sesuai untuk diisikan dalam tempat kosong.

__1___ Masjid Jamek, Jalan Tun Perak masih menyimpan pelbagai barang berharga milik jemaah yang __2__ di masjid itu sejak lima tahun lalu. Setiap kali hari Jumaat, jawatankuasa masjid akan __3__ supaya mereka yang __4__barang-barang itu menuntutnya daripada pentadbir masjid tersebut. Mereka diminta menuntutnya dalam tempoh empat bulan selepas notis __5__di sekitar masjid tersebut.

Contoh



1) (tadbir)
2) (tinggal)
3) (umum)
4) (hilang)
5) (tampal)

This kind exercise can only be seen in *Tatabahasa* topic in *Kemahiran tatabahasa* in sub-menu. Firstly, type all the suitable answer in 1. Then click 2 to get the result.

Part 9 : Help Instructions

The above screen is a sample of the numerous help screen available throughout the program. Instructions are obtained by clicking on the on categories available in the square box. They can view the icons or the sub-menu or the exit screen.

Part 10 : Exit Instructions

The above screen is to obtain confirmation that the program is to be terminated. This screen is obtain when user clicks on the exit link in the main menu screen. Click on 'YA' if you wish to terminate and 'TIDAK' if don't wish to do so.

Part 11 : Glossary

CD-ROM drive	An input device used to read CDs located on the CPU
Graphics	A non-character based method of displaying information on a screen, usually used for displaying pictures.
Icon	A visual symbol or picture used in a menu to represent a program or file or function. The program is usually initiated by using a mouse and clicking the mouse's button when the cursor is over the icon.
Interactive	Describe the mode of working in which there is a direct response to user's instructions as they are input.
MB	MegaByte. Unit of measure for the amount of memory on a computer.
Menu-driven	Describing a program that obtains input by displaying a list of options (the menu) from which the user indicates his choice.
Mouse	A device used to point at a location on a computer screen. It is moved around by hand on a flat surface. The movement on the surface correspond to the movement on the screen. Clicking on the button of the mouse initiate an action on the screen.
MPC	Multimedia Personal Computer. Microsoft minimum specifications for hardware to be used for multimedia purpose.
Multimedia	An application of computer technology that allows the capture, manipulation and presentation of different types of data. E.g. text, graphics, video, animation, audio etc.
Program	A list of instructions which are used by the computer to perform the user's requirements.
RAM	Random-Access memory: this is memory which can be read and written to.
User Interface	The means of communicating between a human being and a computer.

GLOSSARY

AIFF

(Audio Interchange File Format) A format developed by Apple Computer for storing high-quality sampled audio and musical instrument information.It can be played on PC and Mac, and is used by some professional audio software packages.

CD-ROM

Compact Disc Read-Only Memory.An optical disk that is physically the same as an audio CD, but contains computer data.Storage capacity is about 680 megabytes.CD-ROMs are interchangeable between different types of computers.

GIF

Graphics Interchange Format.A format used for displaying bitmap images on World Wide Web pages, usually called a "gif" because .gif is the filename extension.These files use lossless compression and can have 256 colors.

MPEG

(Audio Interchange File Format).1.An ISO (International Standards Organization) group that sets standards for compressing and storing video, audio, and animation in digital form. 2.The standards set by this group.MPEG is a lossy compression method.

PNG

Portable Network Graphics bitmap (filename extension).

RGB

Red, Green, Blue. The three primary colors of light which, mixed together in various proportions, produce all the other colors.In a color cathode ray tube three electron guns direct these three colors of light at the screen in separate beams.

UI

User interface.The combination of hardware and software that makes it possible for a user to interact with a computer or other device.

WAV

A digitized sound file format for Microsoft Windows, which has ".WAV" as the filename extension.